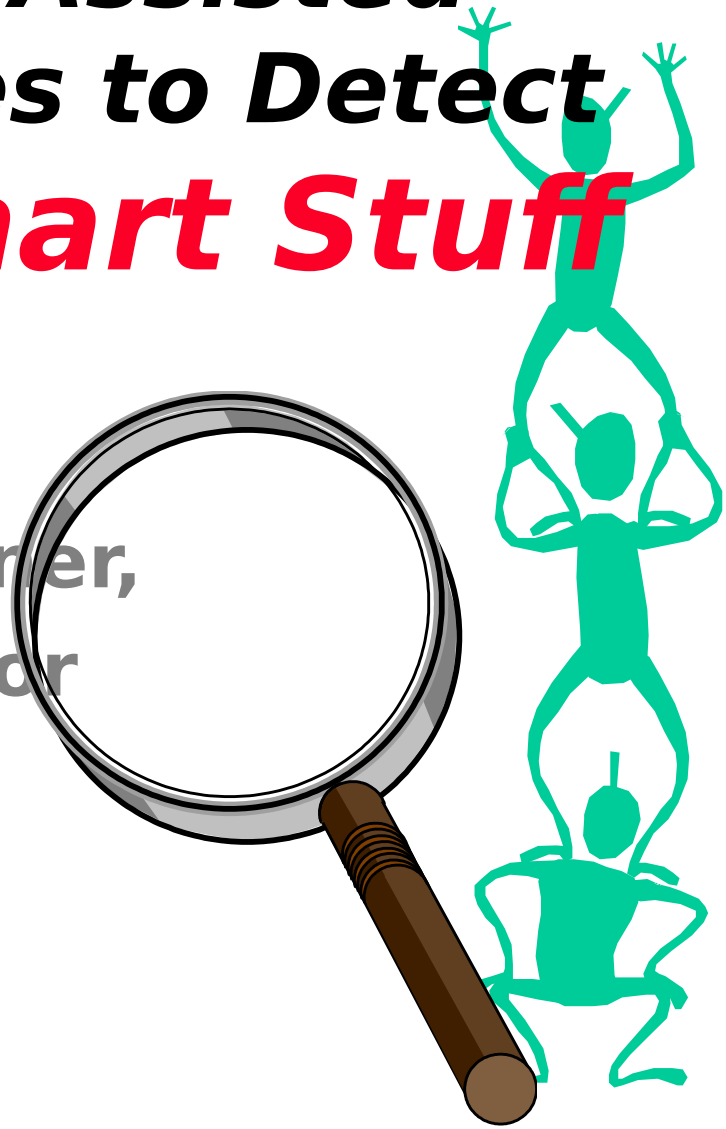
Using Computer-Assisted Auditing Techniques to Detect Fraud & Do Smart Stuff



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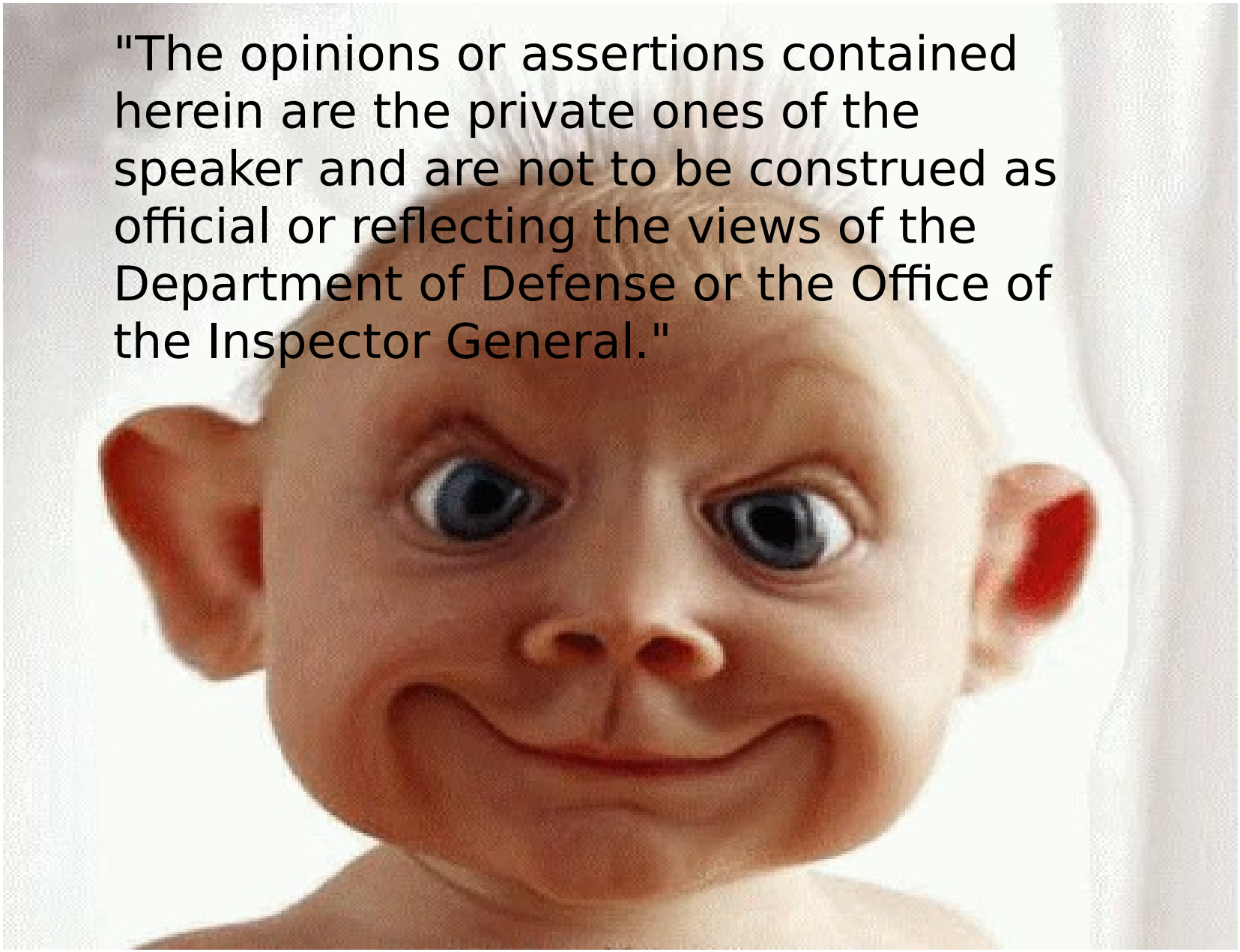
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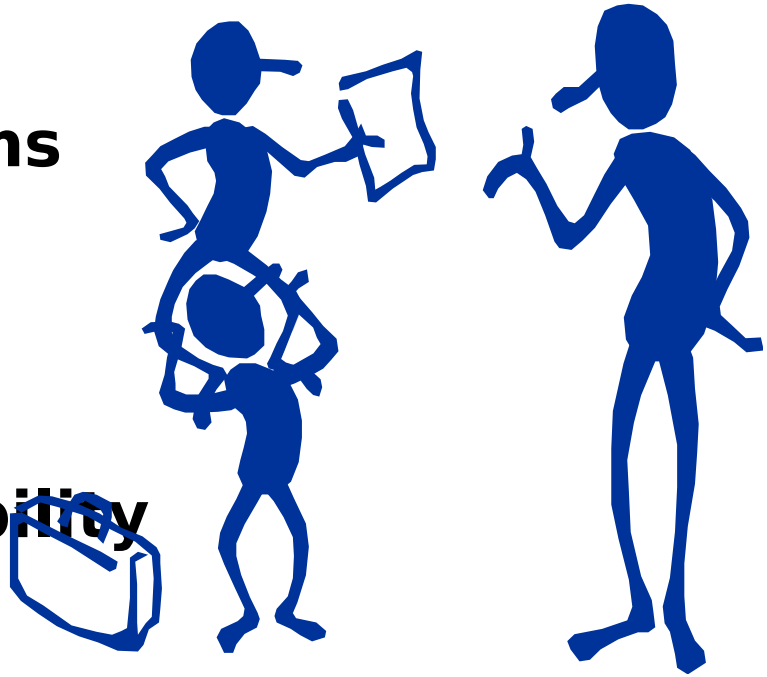
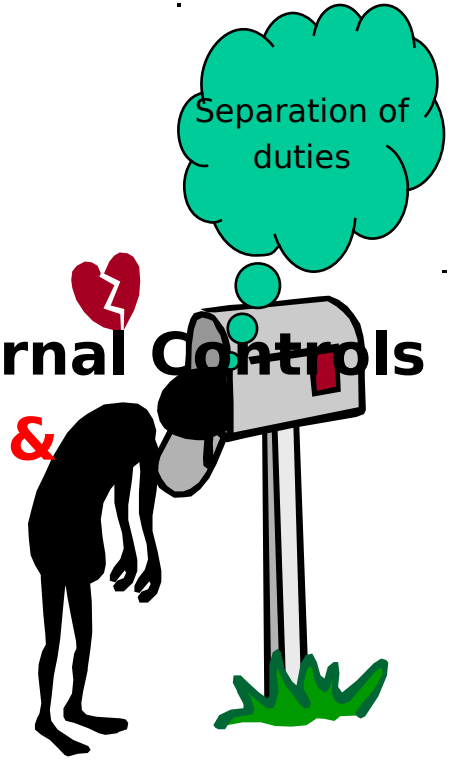
Congressional Interest

- **Headline Grabbing Items**
- **Constituency Interest**
- **Government Accountability**
- **Recent Testimony**



Need to Study
DATA
Continuous

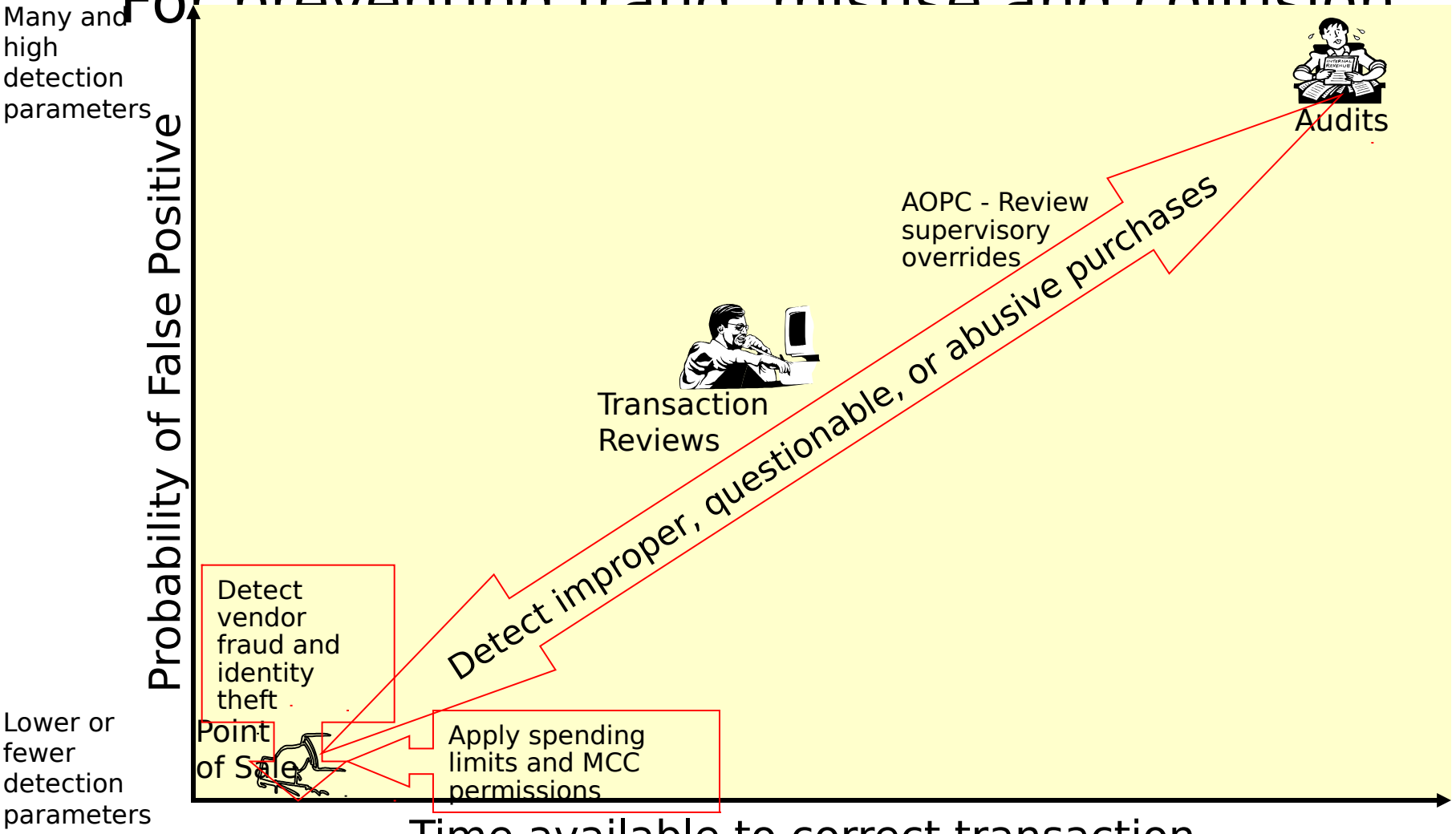
Internal Controls



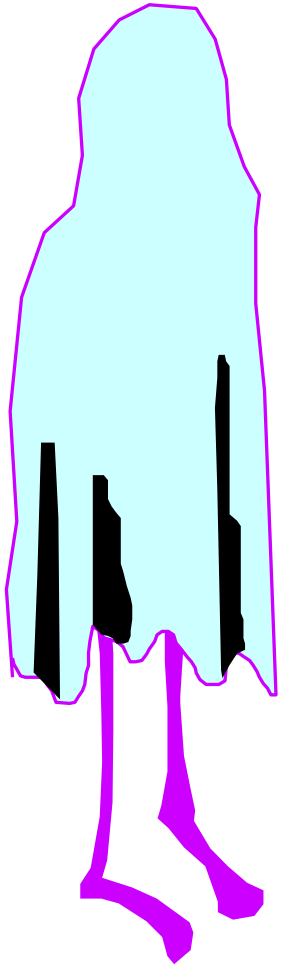
- **Good Internal Controls are Critical**
- **Dwindling Resources Threaten Internal Controls**
- **Remember Compensating Controls & Acceptable Level of Risk**
- **Passwords & Systems Access**
- **Collusion makes detection difficult**
- **Enforce Mandatory Vacations**
- **Beware of the Employee who can do it all; No matter how capable - don't let them !!!**

Balancing Risk and Productivity

For preventing fraud, misuse and collusion


Many and high detection parameters
Probability of False Positive
Lower or fewer detection parameters
Audits
AOPC - Review supervisory overrides
Transaction Reviews
Detect improper, questionable, or abusive purchases
Detect vendor fraud and identity theft
Point of Sale
Apply spending limits and MCC permissions
Time available to correct transaction

Seventh Attribute of *Most* Frauds



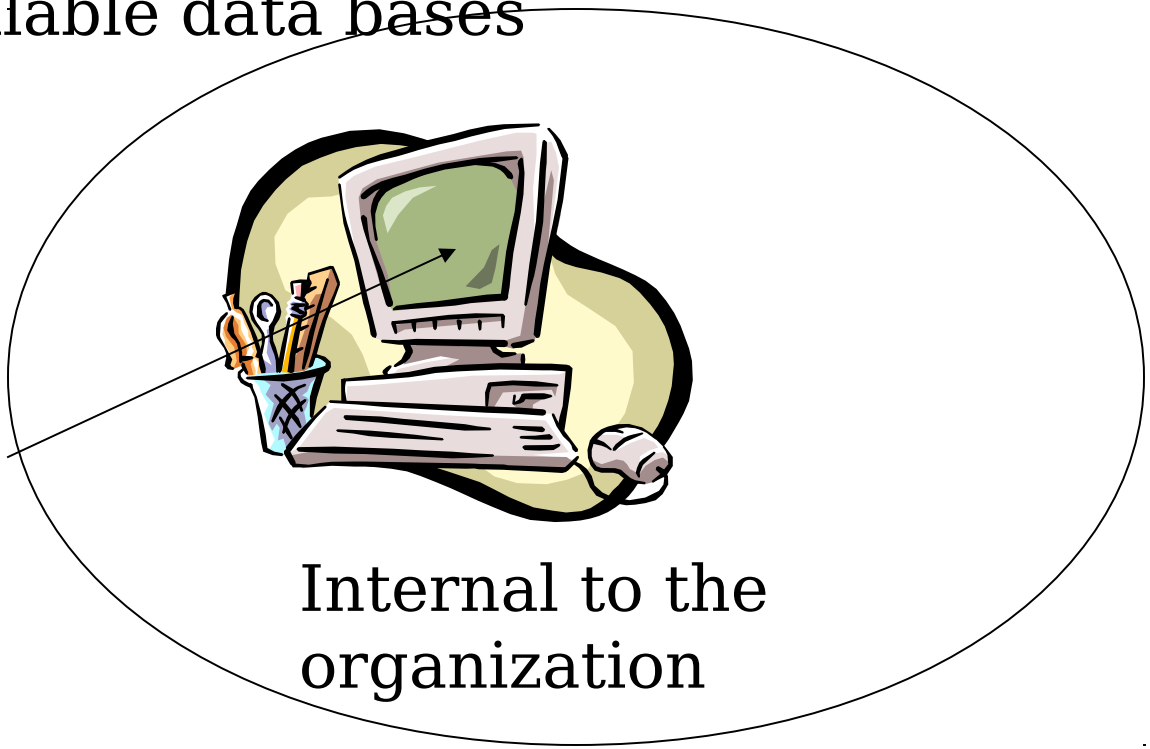
- **Perpetrator**
- **Victim**
- **Motive**
- **Opportunity**
- **Intent**
- **Scenario (*Modus Operandi*)**
- **CONCEALMENT**

What is Data Mining?

- The process of discovering meaningful new correlations, patterns, and trends by sifting through large amounts of data stored in repositories, using pattern recognition technologies as well as statistical and pattern recognition techniques [Gartner Group Interactive: http://gartner6.gartnerweb.com]
- Most often used (up until recently) in marketing and customer analysis

Data Analysis – A Generic Approach

Identify all available data bases



Internal to the organization

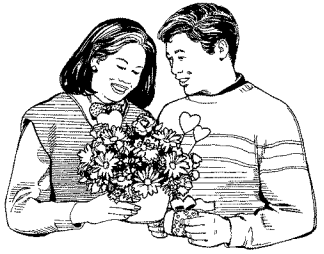
External to the organization

Payroll Fraud

- Databases involved
  - Payroll
  - Personnel
  - Time & attendance
  - Employee directory
  - Terminated employee directory
  - Valid SSN listings
  - Leave and vacation
  - Employee expenses

List record fields in all available databases

Formulate hypotheses about record field relationships



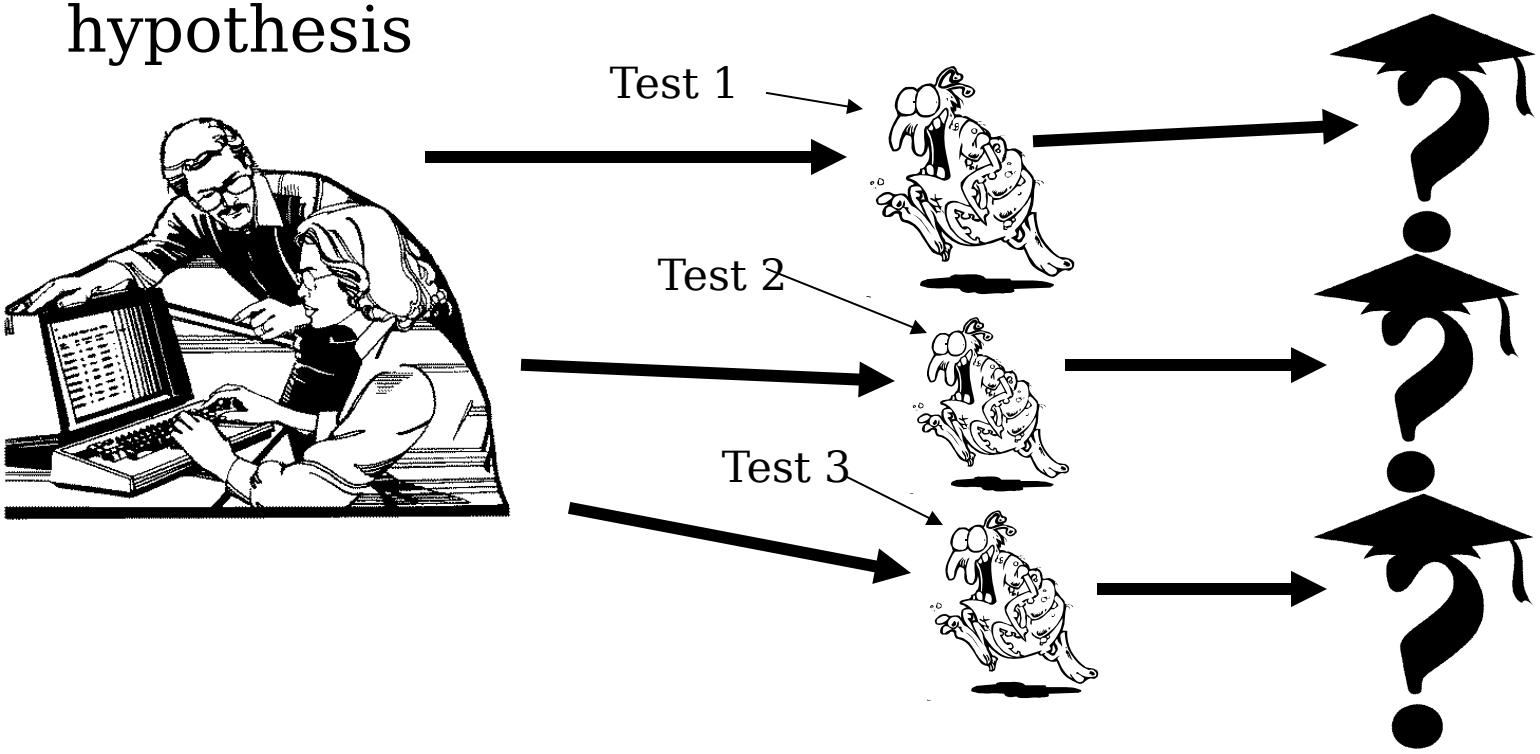
Possible Tests for Payroll Fraud

- Comparisons: Paycheck, but ...
  - no time & attendance
  - not in employee directory
  - no leave ever taken
  - no expenses
  - terminated employee
  - no pension or other deductions
  - no valid SSN
  - no, or scarce, personnel data

Possible Tests for Payroll Fraud

- Duplicates:
  - Payees on same date
  - Same or similar names
  - SSNs
  - Addresses
  - Telephone numbers
  - Direct deposit account numbers
  - Work locations
  - Work telephone numbers

Program analytical tests for each hypothesis



Test 1 2 3

Run tests (output is your “hit list”)

Possible Tests for Payroll Fraud

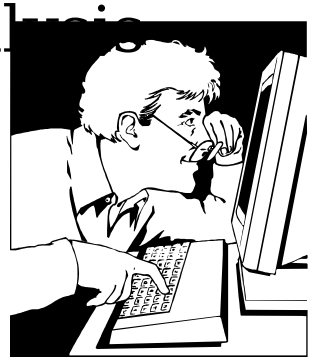
- Employees with P.O. Box addresses
- Wages inconsistent with job classification
- Payroll disbursements above certain amounts (by pay period or cumulative)
- Premium pay above certain amounts
- Deductions but not on payroll
- Pay date precedes employment date
- Overtime with other activity indicators

Evaluate initial hit list and refine the tests

Re-run refined test to produce shorter, more meaningful hit list (repeat steps 5-7, as needed)

Evaluate (via record analysis, interview, or other technique) every item on the refined hit list.

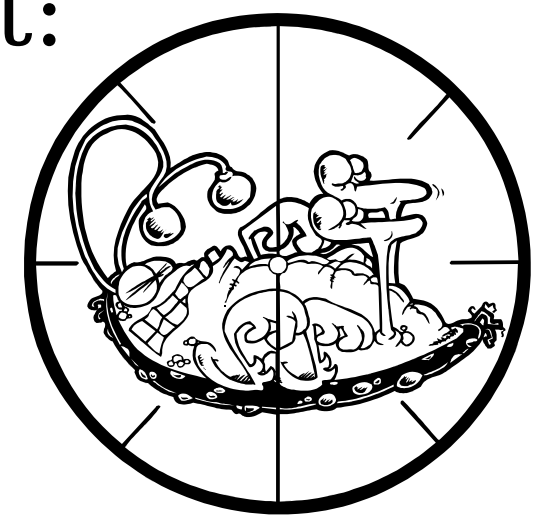
Record Analysis



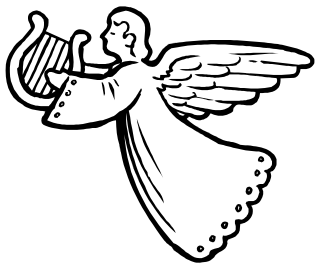
Interview

Other technique

Dispose of every hit:



Valid Explanation found or misuse not fraud



Probable improper transaction – full investigation needed

Identify control problems and corrective actions needed

Control Problems

Corrective Actions Needed

Watch For Anomalies

- **Missing Documents**
- **Photocopies**
- **Unreturned Confirmations**
- **Unsupported or Unapproved Adjustments**
- **Missing approval signatures**
- **Unusual Numbers of Voided Checks**
- **Unreconciled bank accounts; missing canceled checks**
- **Unusual refund activity**
- **When the Data is too perfect**

Four General Categories

- Personal Purchases
- Cardholder Conspiracy With Vend
- Vendor Fraud
- External Fraud

These schemes can also be used in various combinations.

Fraud Indicators

- Regularly recurring split purchases, often to the same vendor
- Purchases outside normal purchase pattern of cardholder (possibly made by others)
- Recurring purchases from relatively unknown sources/vendors
- Purchased items not annotated on property books

Examples of Indicators of Management Control Deficiencies

- Too many cards per Approving Official (AO) (management goal no more than 7 cardholders to an AO)
- Too many transactions per AO (management goal no more than 300 transactions to an AO)
- Card assigned to office or group of individuals instead of a specific person

Examples of Activities Targeted by Data Mining

Indicators used to identify potential fraud or misuse

- Repetitive buying pattern even dollars, near purchase limits, or same or similar name for vendor
- Name for merchant and cardholder (or approving official) the same
- Fewer than 5 cardholders using a specific vendor
- Purchases approved by cardholder or no specific person instead by a office

Developing Indicator Combinations

- Few Single Indicators Are Effective
- Need to Reduce False Positives and Limit the Numbers of Card Holder Profiles
- Number of Possible Combinations is Staggering
- A Few of the Most Interesting Combinations Can Be Initially Selected and Evaluated
- Other Combinations Can Be Continuously Developed and Evaluated
- Highly Interesting Individual Transactions Are Also Identified During the Process of Evaluating Indicators

Project Purpose

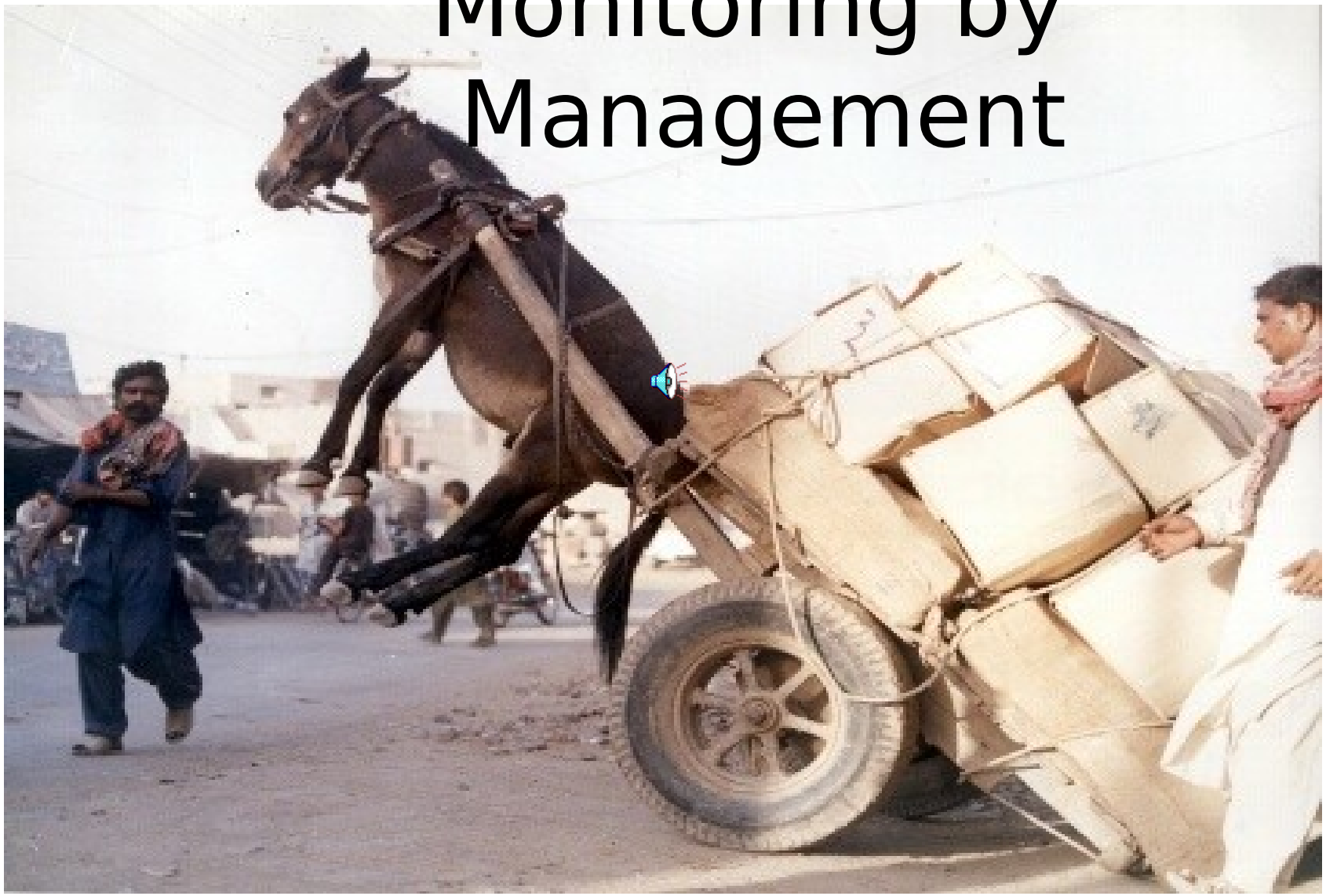
- Create Partnership Between “Fraud Focus Group” And Service Investigative Organizations and Audit Agencies To Develop and Evaluate a Pilot Project For Automated Purchase Card Oversight
- Develop A Method To Identify Anomalies In Purchase Card Data That May Indicate Fraud Or Abuse
- Assess And Improve The Detection Process
- Incorporate Effective Indicators Into Purchase Card Process

Purchase Card Problem Areas

Abuse and misuse includes a range of actions such as:

- Splitting procurements to avoid procurement thresholds
- Purchasing goods or services which, although for a valid governmental purpose, are prohibited on a purchase card
- Purchasing items for which there is no government need
- Purchasing items which do not represent best value to the government
- Engaging in fraudulent activity
- Invoices were being certified without being reviewed.

Continuous Monitoring by Management



Purchase Card Defense in Depth

Point of Sale

Card Limits and Merchant Focus

Card Usage Profiling

Defined Rules and Referral Process

Transaction Review

Cardholder Review

Rules Supported Supervisory Review

Rules Based Assisted Oversight

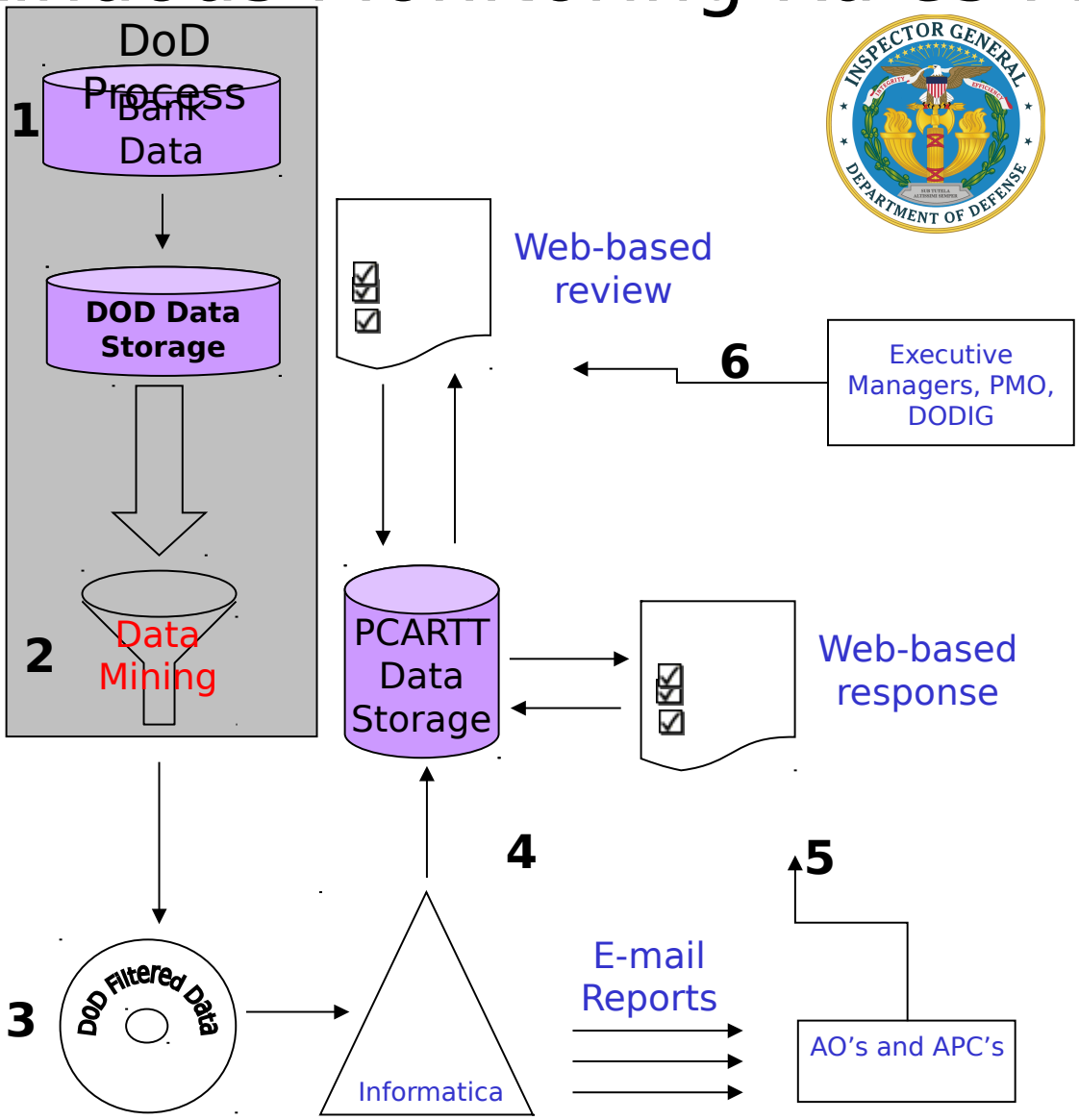
Audit

Transaction History

Post-Approval Sampling

Low Risk of Fraud or Misuse

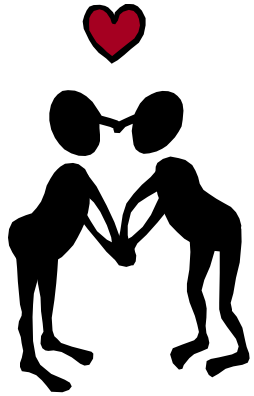
Fraud Pilot:
A Continuous Monitoring Rules Process



Prior Audits vs. Current Data-Mining Approach

PRIOR METHOD	DODIG/Navy Pilot
- Manual inquiries for background documentation	- Automated e-mail and standard format with responses in database for data-mining
- Responses often vague in content and add little value	- Responses objective - Easier to query and track - Allow for Automated Analysis
- Transaction from 1 - 2 years ago	- Most recent month's transactions
- Top-down inquiries	- Bottom-up Reporting (Automated tool pushes reporting to AO)

Current Projects/Audits



- Unauthorized and Questionable Purchases
  - Purchase Cards
  - Travel Cards
  - Communications Services, including long distance services, cellular phones and phone cards
  - Fleet Cards
  - AIR Cards
  - Contract Action Data Discrepancies

Future Potential Applications (Continued)

- Unauthorized and Duplicate Payments
  - Military Housing and Subsistence Allowances
  - Travel Payments
  - Military Pay Entitlements
  - Civilian Pay Entitlements
  - Transportation Payments
  - Contract Payments

Future Potential Applications (Continued)

- Data Integrity and Systems Controls
  - Installation Facility Data
  - Military and Personnel Staffing
  - Lost Personnel Workdays Due to Sickness and On-The-Job Injuries
  - Supply System Backorders
  - Maintenance and Repair Data
  - Accountable Property Records
  - Pharmacy Operations